## ABSTRACT

Method and apparatus for creating alternative versions of code segments and dynamically substituting execution of the alternative code versions. Checkpoints in program code are identified by a compiler, and the checkpoints are used to delineate segments of object code. Two sets of segments of object code are generated, where the first and second sets of object code segments are optimized at different levels. In one embodiment, the first set of segments is optimized at a greater level than the second set of segments. Upon detecting a program error in executing the first set of segments, state information of the program is recovered from a checkpoint, and an object code module is selected from either the first set or second set for execution.